IDAHO OUTLOOK

NEWS OF IDAHO'S ECONOMY AND BUDGET

STATE OF IDAHO **DIVISION OF FINANCIAL MANAGEMENT** **OCTOBER 2007 VOLUME XXX NO. 4**

As the harvest season progresses, our focus fittingly turns to agriculture. This month's *Outlook* shares some of the findings from the United States Department of Agriculture's (USDA) *Productivity Growth in U.S. Agriculture*. In this article, the authors, Keith O. Fuglie, James M. MacDonald, and Eldon Ball, document and explain the tremendous productivity gains this industry has experienced.

Simply put, productivity is "doing more with less." It measures the amount of real output per hour of labor. Productivity is driven by the quality of the labor force, the amount and quality employed per person, and technology (also known as total factor productivity). Of these factors, technology is the hardest to define and measure. Economists define productivity as anything which increases output for a given combination of labor and capital. For example, workers' outputs usually increase as they scale the learning curve for a new software product. In this case, the software is capital, not technology. Technology is the increased knowledge which comes from experience. To use another popular saying, technology is "working smarter, not harder."

American agriculture serves as an excellent example of doing more with less. USDA estimates total agricultural output in 2004 was 2.66 times higher than in 1948. Its research also shows this impressive gain was achieved even while the net amount of inputs actually declined slightly. This decline resulted from reductions in cropland and the drop in farm labor employed. The amount of other inputs, such as fertilizer and machinery, did increase over the same period, but not enough to offset an overall decline. Given the slight decline in inputs, the increased output is due to productivity, which increased 2.70 times since 1948.

The USDA study divides productivity into its components. Over the study period, U.S agricultural productivity increased 4.9% annually, which helped total farm output to expand 1.7% per year, despite experiencing a declining number of farm hours worked. The 4.9% productivity growth reflects a 3.0% increase in inputs per worker, a 0.1% gain in improved labor quality, and a 1.8% rise in total factor productivity. Put another way, 60% of the growth in labor productivity was attributable to inputs per worker, 2% of the growth came from a more educated and experienced workforce and 30% of the increase reflected gains in technology.

Interestingly, the roles of technology and inputs have reversed over time. Initially, productivity growth was dominated by the increased use of inputs per worker, but more recently technology has moved into the lead role. The contribution from improved labor quality has changed little. Specifically, the increased use of inputs per worker accounted for 74% of the productivity rise from 1948 to 1980. Over this same period, technology added another 24%. However, technology accounted for nearly two-thirds of the increase in labor productivity from 1981 to 2004, while inputs contributed a third of the increase.

We hope these highlights encourage our readers to review the original article, which can be found at http://www.ers.usda.gov/publications/EB9/eb9.pdf. It makes for fascinating reading for those interested in both agriculture and economics. And we believe it would be a productive investment.

Sources of Labor Productivity Growth in Agriculture

	1948-2004	1948-1980	1981-2004
		Percent	
Growth rate in agricultural output	1.7	1.9	1.6
Growth rate in labor hours worked	-3.2	-3.9	-2.1
Growth rate in labor productivity (output/hour)	4.9	5.8	3.7
Contribution to growth in labor productivity from:			
Increase in inputs per worker	3.0	4.3	1.2
Improvements in labor quality[1]	0.1	0.2	0.1
Growth in TFP[2]	1.8	1.4	2.4
	4.9	5.8	3.7
Share of growth in labor productivity due to:			
Increase in inputs per worker	60	74	33
Improvements in labor quality[1]	2	3	1
Growth in TFP[2]	37	24	66
	100	100	100

[1]Higher quality labor comes from having a larger share of better educated and more experienced workers in the farm labor force.

[2]Total factor productivity is a statistical series developed by the Economic Research Service to isolate the effects of changes in technology and related factors from other changes in inputs on the growth of agricultural input.

Source: Economic Research Service.

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General Fund Update

As of September 30, 2007

	$ Millions		
Revenue Source	FY08 Executive Estimate[3]	DFM Predicted to Date	Actual Accrued to Date
Individual Income Tax	1,392.5	273.1	290.2
Corporate Income Tax	189.1	42.5	33.1
Sales Tax	1,172.2	307.2	318.2
Product Taxes[1]	26.7	8.3	8.4
Miscellaneous	124.8	27.3	31.5
TOTAL GENERAL FUND[2]	**2,905.3**	**658.4**	**681.4**

1 Product Taxes include beer, wine, liquor, tobacco and cigarette taxes
2 May not total due to rounding
3 Revised Estimate as of August 2007

General Fund revenue exceeded expectations for the third straight month in September, setting a record for this fiscal year with $10.4 million more revenue than expected (July began the fiscal year with a close $10.2 million excess). This brings the cumulative excess for the fiscal year to date to $23.0 million, a level 3.5% higher than expected. September's strength was dominated by the individual income tax, which came in $12.8 million above the expected amount. Corporate income tax, on the other hand, came in $5.3 million lower than expected.

Individual income tax revenue is now $17.1 million (6.3%) higher than expected for the first quarter of FY 2008. Seventy-five percent of this excess arrived in September. For the month, the gains consisted of $6.2 million in filing collections, $5.1 million in withholding collections, and $1.5 million in refunds (i.e., lower than expected). Upon examination, September's strong individual income tax showing may be something of an anomaly. Withholding collections appear to have been driven in part by severance benefits. Filing collections appear to have been accelerated by a new requirement that payments accompany filed extension returns.

Corporate income tax revenue was $5.3 million lower than expected in September, bringing the year-to-date shortage to $9.4 million. Filing collections were $7.2 million lower than expected in September, but this is really an artifact of accounting practices within the corporate income tax. September filing collections were reported as ***negative*** $3.3 million (that's right, the revenue stream flowed backwards in September) due to Multi-State Tax Compact receipts (that were counted as filing collections in prior months) being removed from filing collections in September. The cumulative picture ($9.4 million short) is probably accurate, but it was happening earlier than the $5.3 million shortage reported in September.

Sales tax revenue was $1.3 million higher than expected in September, continuing a trend of steadily shrinking excesses for the first three months of the fiscal year (July was up $6.2 million, and August was up $3.5 million). This pattern is consistent with the Division of Financial Management's economic outlook, which expects that the housing and construction slowdown, while lagging the nation, will nonetheless impact the Gem state.

Product taxes were slightly ($0.1 million) above target in September (on strong tobacco tax collections), while miscellaneous revenue was $1.5 million higher than expected for the month. Interest earnings and insurance premium taxes combined to provide September's bounty.